

Guest Article by Linda Davey Dempsey

Vol. 10, No. 3 Summer 2003

The Accidental Birder

Luring songbirds to a backyard garden, feeder or birdhouse has long been a favorite past time for millions of folks, but prior to moving from Texas three years ago to our home on Pine Lake in Sammamish, I wasn't one of them. I had no plans to become one, either, since my interest in "birding" was limited to successfully disposing of Kitty's occasional contributions to the family larder.

Lakeside living changed that, because where backyard meets waterfront, raptors, songbirds, waterfowl and shorebirds converge to create one of Mother Nature's most spectacular shows.

With free admission and a front row seat, I became an observer and documenter of all things avian in spite of myself.

Our move to Pine Lake in September 2000 coincided with the arrival of migrating waterfowl. With a new set of binoculars and a stack of field guides, I made it my mission to identify each new arrival.

Like many of King County's lakes, in addition to hosting year-round residents, Pine Lake also draws migrating species from Canada and Alaska due to the mild winter climate. While some winter over, others stop briefly before continuing south along the Pacific Flyway.

The birds that stay vary from one season to the next. Wigeons, abundant during our first year on the lake, have been only occasional visitors since. Common mergansers were rarely seen until this past fall, when they arrived in great numbers.

By spring, my newly created "Pine Lake List" included buffleheads, common goldeneyes, American wigeons, ring-necked ducks, and lesser and greater scaups.

Spring is a time of high drama on Pine Lake, as the birth of goslings and mallard chicks coincides with the arrival of the



*A heron on Pine Lake
(Photo: L. Davey Dempsey)*

raptors. With bald eagles circling above, otters and big mouth bass swimming below, and a host of other predators lurking at the water's edge, sadly, most do not survive.

My first sighting of a bald eagle was thrilling, and despite their thieving nature and penchant for duckling dinners, they remain a favorite. Though eagles do not nest on Pine Lake, each spring, when the lake is stocked and teeming with fish, ospreys come to fish, and eagles come to steal it away.

(Continued on p. 7)

What's Inside. . .

Reclaimed Water.....	2
Dr. Lakenstein on Bats.....	3
Events and Info.....	3
Level II Monitor Report.....	4
Fish in King County Lakes.....	6
2003 Noxious Weed List.....	7
Fish Common to King County.....	8

King County at Work

Reclaimed Water: A valuable resource

A growing population, building moratoriums, threatened salmon, and periodic drought conditions have made us all more aware of increasing demands on our region's limited water supply. Reclaimed water has reduced the demands on water resources in many areas across the country and is a largely untapped source of water supply for the Puget Sound.

Reclaimed water is wastewater that is treated to such a high level that it can be used safely for non-drinking water uses such as land-



King County used reclaimed water in this demonstration garden



Watering agricultural crops is another use for reclaimed water

scape and agricultural irrigation, heating and cooling, and other industrial processing. Over 1,900 communities in this country have existing, well-run and regulated reclaimed water programs. California, Florida, Texas and Arizona have been irrigating golf courses, athletic fields and parks for years.

King County's Wastewater Treatment Division produces about 315 million gallons per year of reclaimed water. Both regional treatment plants use reclaimed water for plant processes and any irrigation done on site. Fort Dent Park,

just north of the South Treatment Plant in Renton, started irrigating their athletic fields with reclaimed water in 1998, saving over 5 million gallons of drinking water each year.

Later this year another neighbor of the South plant, Foster Golf Course, is planning to hook up and irrigate its fairways, greens and landscaping with 300,000 gallons of reclaimed water per day.

Purple is the nationally designated color for marking reclaimed water pipes, hoses, pumps, and

(Continued on p. 3)



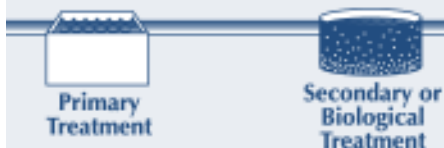
Reclaimed water is ideal for watering golf courses

STANDARD WASTEWATER TREATMENT PROCESS

Typically, wastewater treatment begins with **primary treatment** where solids are separated from liquids.

The next phase of treatment is **secondary** or **biological treatment** because oxygen is added to wastewater to activate the living organisms (such as bacteria) that eat the dissolved organic material still in the wastewater.

After secondary treatment, wastewater is typically **disinfected** and released back into the environment.



Disinfection

ADVANCED TREATMENT

Some of the water treated at the treatment plants is reclaimed. **Reclaimed water** must be treated beyond secondary treatment to meet health standards. This **advanced treatment** traditionally involves filtering the water through sand filters to remove any remaining solids and an extended disinfection process.



Bats: Fly the friendly skies

Ask Dr. Lakenstein

Dear Dr. Lakenstein,

We have bats flying all around our lake. Should we be concerned?

Signed,
Batty at Beaver Lake



Little Brown Bat

Dear Batty:

No! Bats get a bad rap. Actually, they are our good friends – especially near water. Without bats to clear the air by munching mosquitoes and other bugs, we'd be running for cover all summer long.

There are 15 species of bats in the Northwest with eight found in King County. Most common are the little brown bat (above) and the big brown bat, both fond of warm attics and human structures, even in the city! In rural areas, you might see some forest dwelling bats, including the beautiful silver-haired bat and the tiny Yuma, California or long-eared myotis (mouse-eared bats). Lucky spotters may even see the secretive hoary bat or the long-legged myotis.

Bats spend their days sleeping and come out at night to catch

hundreds of insects. Females roost together in maternal colonies and help each other care for their young, while the males tend to be solitary. Bats love water – both for drinking and as a source of insects – so lakeside residents are likely to see them from spring through fall. Bats can carry rabies, so to be safe, never handle them.

Do you want to attract bats to eat your mosquitoes? Or maybe you have bats in your attic you want to safely evict? Bats Northwest, a local bat conservation group, can give you safe eviction instructions, help you build a bat house, and provide more information on bats. You can even join an expert on a bat walk! Call 206-256-0406 or go to www.batsnorthwest.org.



Water (Cont. from p. 2)

other transportation or storage equipment to ensure that human health and safety are always protected. When reclaimed water is in use, you'll see signs and purple pipes.

Water conservation is a fundamental part of our region's water management strategy. Increasing the use of reclaimed water, along with reducing demand on our water supply, extends our conservation efforts. If you are interested in learning more, tours are available at King County's Wastewater Treatment Plants by calling 206-296-8286. For more information on reclaimed water or water conservation, please call 206-296-8361.



Events & Info

Master Recycler Composter Program...

Would you like to learn more about resource conservation and waste reduction? If so, King County's free Master Recycler Composter program may be for you. You'll learn about waste prevention, recycling, home composting, and alternatives to household hazardous waste during 40 hours of class time. In return for this training, volunteers share their knowledge through 40 hours of community outreach.

The next MRC training is Tuesday evenings plus five Saturdays, Sept. 9-Oct. 21, 2003 in Issaquah. Only King County residents outside of Seattle are eligible for the training. For an application or more information, contact Karen May at 206-296-4353 or karen.may@metrokc.gov.

A New Look...

We've updated the look of our newsletter to better reflect our goal of empowering citizens to act as stewards of their lakes and watersheds.

The Number You Have Reached...

Lake Stewardship Program staff member Katie Sauter has changed her name to Katie Sauter Messick and her phone number to 206-263-5086. Please make a note of it.

Volunteer Data Report

King County's lake sampling season is in full swing thanks to the continuing efforts of more than 100 volunteers at 51 lakes in western King County. The water quality data we are compiling will help us understand environmental conditions and look for trends. Averaged results from the first three sampling events this year are presented below

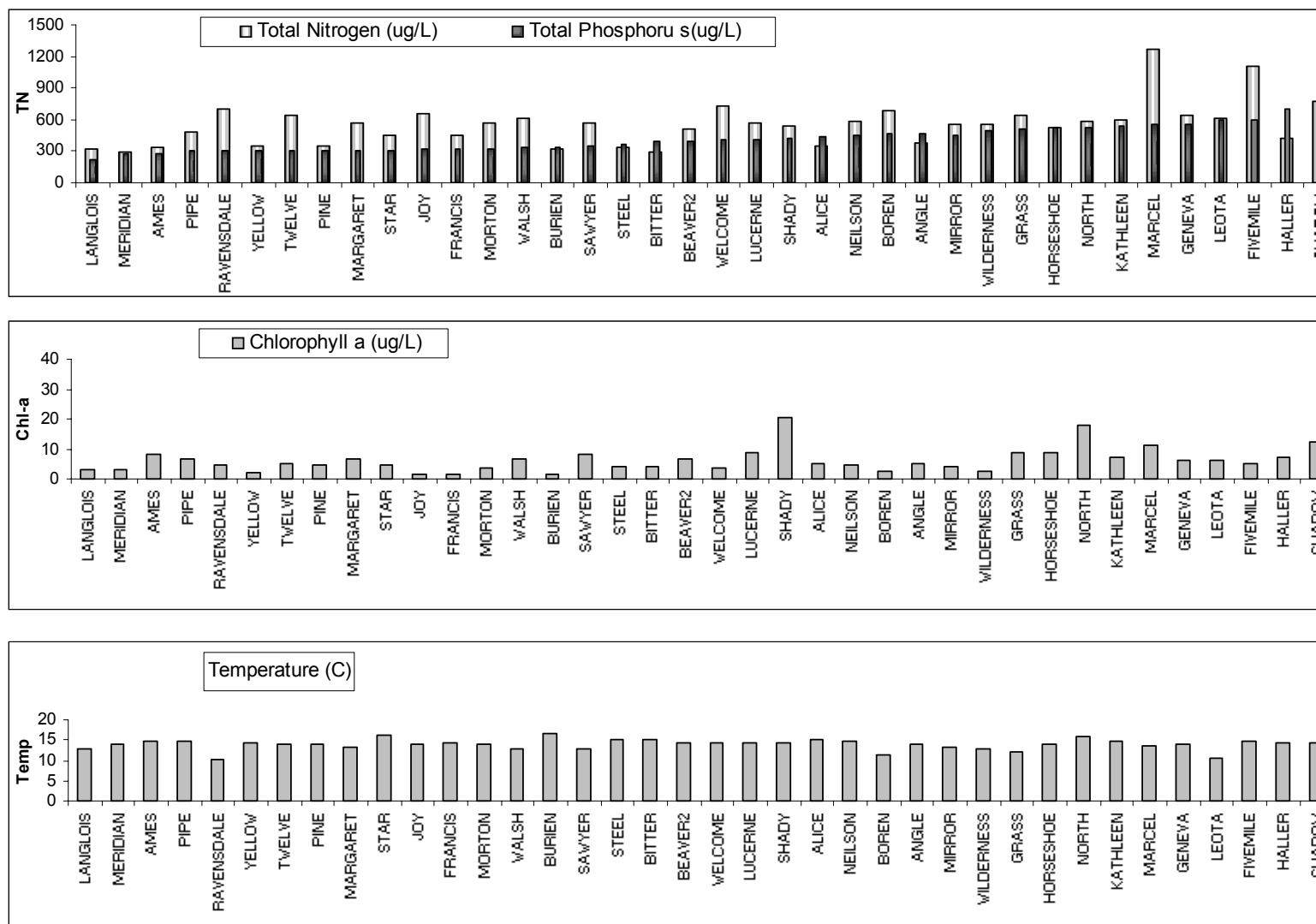
as charts for all the lakes. In addition, the charts on the right compare values from the past two years for a group of lakes reporting "abnormal" algae blooms.

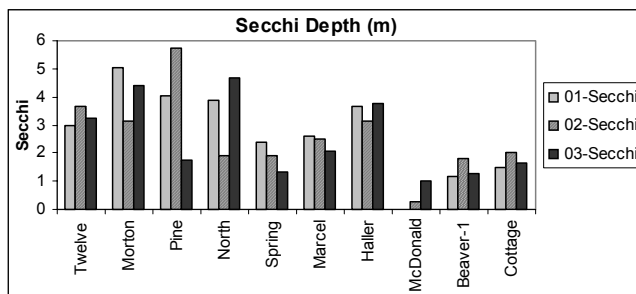
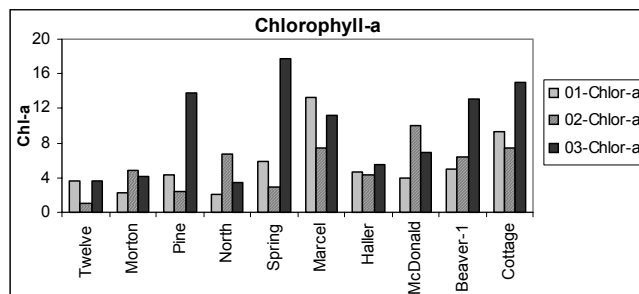
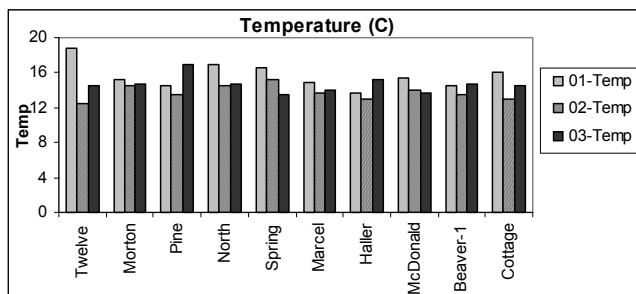
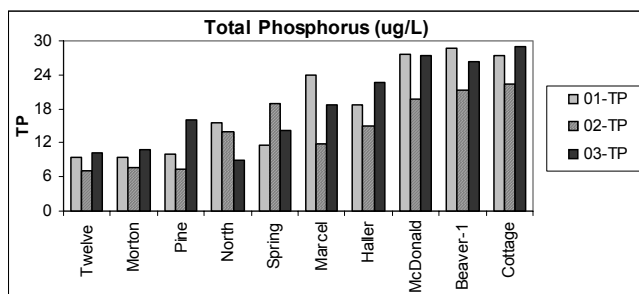
Of course, "normal" is difficult to define because lakes are dynamic ecosystems that change in response to many different factors. Often, the best sense of "normal conditions"

lives in the good memory of a longtime lakeside resident. However, the data we are gathering with the help of volunteer monitors allows us to establish quantifiable ranges of conditions at the monitored lakes.

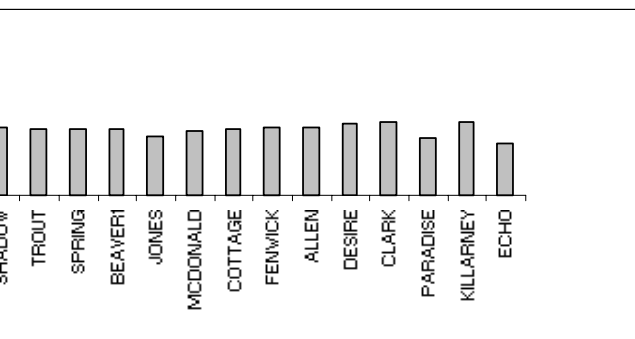
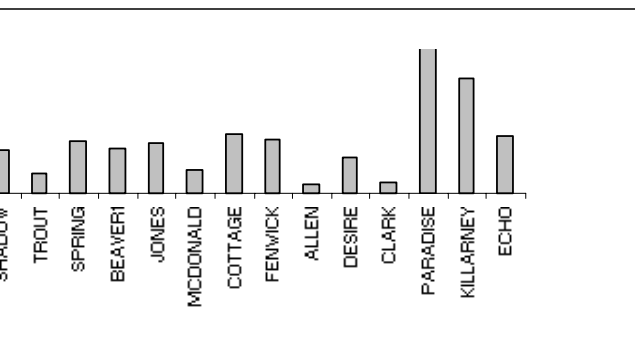
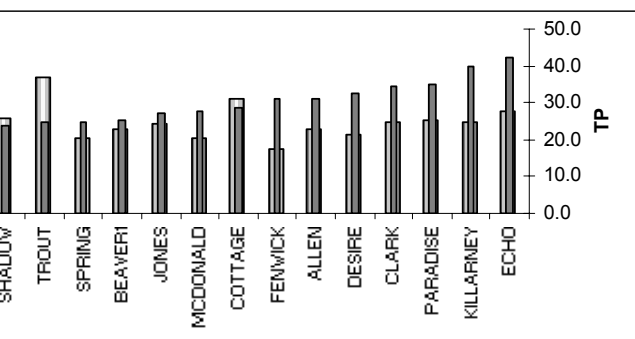
The first set of charts (below) compare data for three different measurements. Phosphorus is an

Charts show averaged results from the first three sampling events this year. For a more complete analysis of King County lakes, see the reports online: <http://dnr.metrokc.gov/wlr/waterres/smlakes/>.





Comparisons of parameters measured at ten lakes that experienced "abnormal" algae blooms this year



important nutrient in northwest lakes that often limits algae growth (measured by chlorophyll *a* concentrations), which can in turn affect water transparency (Secchi depth).

Because phosphorus concentrations play such a key role, the lakes in all three charts are ordered by ascending phosphorus values. This should be thought of as a snapshot of current conditions and should not be used to characterize general water quality of the lakes.

The second set of charts (above) compares several parameters measured twice in May at ten lakes that experienced "abnormal" algae blooms

thus far in 2003. Again, the lakes are ordered by average total phosphorus. In general, as average phosphorus concentrations increase, chlorophyll *a* concentrations generally go up accordingly, and Secchi depths generally decrease. Note that the temperatures in May 2003 were higher at all lakes than in 2002, and higher at many lakes than 2001.

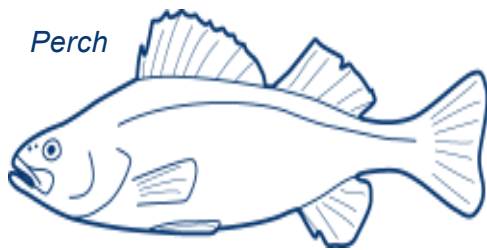
It is likely that weather conditions played some role in abnormal algae blooms this year, but the precise significance is difficult to separate from other factors at work. Three years is not very long in the life of a lake!

Thanks to all our volunteers for making the program possible. If you have questions about conditions in your lake, please call Michael Murphy at 206-296-8008 or email michael-wlr.murphy@metrokc.gov.



Fishing in King County Lakes: Who's In There?

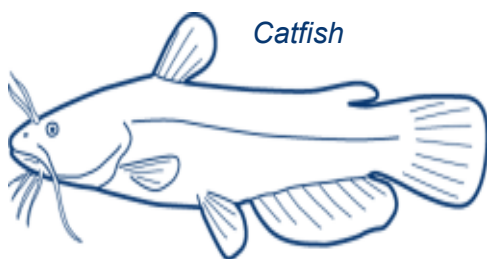
Little historical information exists on the native populations of fish in King County lakes. Settlers and the U.S. Bureau of Fisheries started putting other fish that they knew and liked into regional lakes



Perch

nearly as soon as people started to angle for them. Many sport fish currently found in County lakes were introduced in the 1890s, originally from the east coast and mid-western regions of the United States.

Even today, not much is known about the current distribution of many species of fish in our lakes. Fish species that are threatened, such as bull trout and Chinook salmon, have been the focus of recent studies. So much more is known about their life histories and environmental requirements than other fish that are not considered to have economic or recreational value.



Catfish

Approximately 76 species of freshwater fish live in the northwest, including the anadromous fish that spend part of their lives in salt water. Of these, only 46 are considered native, meaning that nearly 40 percent of the fish species now found in our lakes and streams have been introduced. Important native sport fishing species include members of the trout family, such as rainbow, cutthroat, and bull (or Dolly Varden), as well as the Pacific salmon that spend part of their lives in freshwater, such as sockeye, Chinook and coho. In particular, the rainbow trout populations are augmented every year by stocking selected lakes with hatchery fish for the public to catch. Trout prefer cool water and will move to deeper water if the temperature rises above 70 degrees F. They rarely are found in shallow areas with lots of aquatic plants.

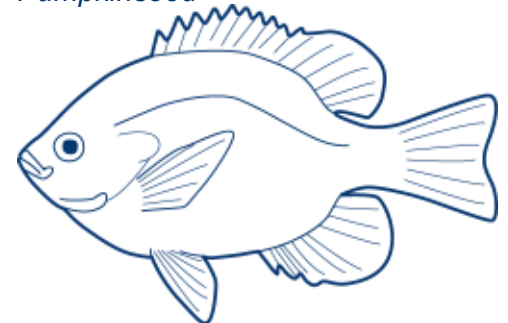
The introduced species from the eastern United States are often referred to as “warm water” fish because of their tolerance for warmer water temperatures than trout. This is accompanied by a preference for shallow water and areas filled with aquatic plants above muddy bottoms. Common species found here now include several related spiny-rayed fish known as the large mouth bass, black crappie, and pumpkinseed. Others include a catfish relative called the brown bullhead and the yellow perch. They differ only slightly in temperature, food



Salmon

choices, and habitat requirements. Very young fish will eat zooplankton, small mollusks, and insects in various life stages. Most older, larger fish will switch to preying on smaller fish such as sculpins or juvenile salmonid species as they grow older and larger. The typical lifespan is 5-7 years, but the large mouth bass can live as long as 12-16 years and gets very large as it ages.

Pumpkinseed



All are considered good tasting, which may be why they were originally introduced to Northwest waters. However, our cool summer temperatures do not promote the rapid growth that these fish show in other regions of the US, and so they may not reach the size that most people consider worth preparing for a meal. This is particularly true of the pumpkinseed and the perch, and they are considered to be under-

2003 Noxious Aquatic Weed List

To help protect the state's people, resources and private lands, the Washington State Noxious Weed Control Board adopts a state weed list each year comprised of three categories – Class A, B and C – and the County Board has also included "Weeds of Concern" and "Obnoxious Weeds," which are plants that have environmental impacts, but are not currently required for control.

To help identify noxious weeds, images are available online at: <http://dnr.metrokc.gov/wlr/LANDS/Weeds/>. For assistance email noxious.weeds@metrokc.gov or call 206-296-6519.

Following is the list of Aquatic Noxious Weeds.

Weeds of Concern

Weeds listed as Class B and C by the state, but considered of lower

priority in King County. Control is not required by law, but citizens are strongly encouraged to control and contain existing populations:

- reed canarygrass (*Phalaris arundinacea*)
- Brazilian elodea (*Egeria densa*)
- yellow flag iris (*Iris pseudacorus*)
- fragrant waterlily (*Nymphaea odorata*)
- eurasian watermilfoil (*Myriophyllum spicatum*)

Class A

Weeds with a limited distribution in the state, by law requiring control and eventual eradication when identified:

- hydrilla (*Hydrilla verticillata*)

Class B

Weeds which have an uneven distribution throughout the state, by law requiring containment, control, and slowing of spread when identified:

- fanwort (*Cabomba caroliniana*)
- parrotfeather (*Myriophyllum aquaticum*)
- yellow floating heart (*Nymphoides peltata*)

Class C

Weeds common throughout most of Washington, by law requiring control with containment as the primary goal:

- No aquatic weeds currently listed in King County



Eurasian
Milfoil



Fish (Cont. from p. 6)

fished in northwest lakes. Since they reproduce rapidly, the lack of recreational harvesting also leads to great numbers of small fish, which then compete with each other for food and become stunted in growth.

For a complete list of fish common to King County lakes, see the chart on **page 8**.

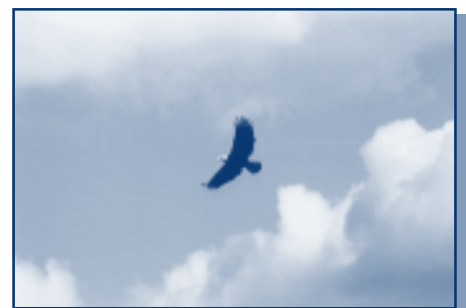


Common Fish in King County Lakes			
Native to the northwest		Introduced species	
Cutthroat trout	Game	Carp	Game/
Rainbow trout	Game	Brown	Predator
Bull trout	Game	bullhead	Game/
Sockeye salmon	Game	Large-mouth	Predator

Birder (Cont. from p. 1)

My Pine Lake List, which now includes nearly 100 species of waterfowl, raptors, songbirds and shorebirds, will be retired at the end of the year. Though my initiation into the world of birding was accidental, the opportunity to create "Pine Lake List, Part Two" next year is entirely by choice.

Linda Davey Dempsey, a native Texan, lives on Pine Lake with her husband and three children. Her professional background includes writing, marketing and public relations. Since moving to Pine



A bald eagle soaring over Pine Lake (Photo: L. Davey Dempsey)

Lake she has taken up bird-watching, photography and collaborating on nature documentaries with her husband.





King County

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Water and Land Resources Division
 King Street Center
 201 South Jackson Street, Suite 600
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This newsletter is also available online at

<http://dnr.metrokc.gov/wlr/waterres/smlakes>

Alternative formats
 available upon request.
 Voice: (206) 296-1959
 or TTY Relay: 711

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Common Fish in King County Lakes

(See complete article on p. 6)

Game = Fish good for sport angling and human consumption.

Fish food = Fish that are food targets of other fish.

Predator = Sometimes considered a game fish, competes with game fish for food.

Native to the northwest

Name	Remarks
Cutthroat trout	Game
Rainbow trout	Game
Bull trout (Dolly Varden)	Game
Sockeye salmon (kokanee)	Game
Redside shiner	Fish food
Northern pikeminnow (squawfish)	Game/Predator
Peamouth	Game/Predator
Largescale sucker	Predator
Three-spine stickleback	Fish food
Prickly sculpin	Fish food

Introduced species

Name	Remarks
Carp	Game/Predator
Brown bullhead	Game/Predator
Largemouth bass	Game/Predator
Smallmouth bass	Game/Predator
Rock bass	Fish food/Game
Black crappie	Game/Predator
Bluegill	Fish food/Game
Pumpkinseed	Fish food
Yellow perch	Game/Predator